



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,595	06/09/2006	Thomas Scherer	WUE-50	1980
7590 12/31/2009				
Thomas J Burger				
Wood Herron & Evans				
2700 Carew Tower				
441 Vine Street				
Cincinnati, OH 45202-2917				
EXAMINER				
COX, ALEXIS K				
ART UNIT		PAPER NUMBER		
3744				
MAIL DATE		DELIVERY MODE		
12/31/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,595

Applicant(s)

SCHERER ET AL.

Examiner

ALEXIS K. COX

Art Unit

3744

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6, 11, and 13-14 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Objections

1. Claims 1 and 11 are objected to because of the following informalities:

On lines 6 and 9 of claim 1, the repetition of the limitation of "a sensor" is unclear; it is suggested that alteration to "a feed air temperature sensor" on line six and "an ambient air temperature sensor" on line 9 to increase the clarity of the claims.

On lines 5 and 9 of claim 11, the repetition of "a sensor" is again unclear; alteration of line five to read "an injection air temperature sensor" and line 9 to read "an ambient air temperature sensor" to make it clear that these are separate sensors.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-2, 4-6, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US Patent No. 5,479,983) in view of Seiji (JP Patent No. 09123731).

Regarding claims 1, 4, and 11, Fischer et al discloses a passenger aircraft, the cabin (1B, see column 3 line 16) of which is sub-divided into several cabin zones (2, 3, 4, see column 3 lines 19-20) supplied with specially temperature-controlled feed air (see column 3 lines 35-38), including an electronic control unit (41A, see column 5 line 40) arranged to control, for each cabin zone, the temperature of the injected feed air dependent upon a deviation of an injection temperature actual value, measured by sensor (35-40, see column 3 lines 50-51), in relation to an injection temperature target value for a part of the cabin zones by comparing an ambient temperature actual value for the ambient temperature in the cabin zone in question, measured by sensor, with an ambient temperature target value. It is noted that Fischer does not explicitly disclose every other cabin zone to be without a temperature sensor, but to be controlled

according to the temperature recorded in at least one other zone and a correction factor instead. Seiji explicitly discloses a passenger cabin of a vehicle divided into zones in which at least one zone does not have a temperature sensor and, instead, a predicted environmental temperature is calculated with a correction factor due to differences between zones, such as the amount of load added by sunlight (see paragraph [0022]). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to use the correction factor of Seiji instead of half of the temperature sensors of Fischer in order to reduce the weight caused by wiring in additional zone sensors.

Regarding claim 2, it is noted that Fischer does not explicitly disclose the injection temperature target value for the first cabin zone is established on the basis of the injection temperature target values and injection temperature actual values of all second cabin zones. Seiji discloses this feature (see paragraphs [0024], [0025], and [0034]). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to use the vehicle zone control without sensors in half the zones of Seiji by using data from all zone sensors which are present in order to increase the accuracy of the model used in the determination of appropriate zone control.

Regarding claim 5, it is noted that Fischer does not explicitly disclose the use of predetermined correction values for cabin zones without sensors. Seiji explicitly discloses this feature, as the coefficient matrix K2 (see paragraphs [0039] and [0040]) constitute correction values for each zone which are predetermined.

Regarding claim 6, it is noted that Fischer does not explicitly disclose the use of user-entered correction values for cabin zones without sensors. Seiji explicitly discloses

this feature (see paragraph [0046]), as coefficient matrix K1 is entered according to what is observed.

Regarding claims 13 and 14, Fischer et al discloses a device for controlling the temperature of feed air to be injected into a cabin zone of a passenger aircraft, comprising a temperature sensor (35-40, see column 3 lines 50-51) measuring the injection temperature of the feed air to be injected into the cabin, an electronic control unit (41, see column 5 lines 12-14) connected to the temperature Sensor (see column 5 lines 33-39), Wherein the control unit controls the temperature of the feed air to be injected into the cabin zone dependent upon a deviation of measured injection temperature actual value of the feed air to be injected into the cabin zone from an injection temperature target value. It is noted that Fischer et al does not disclose the control unit to actually establish the injection temperature target value without using an ambient temperature actual value for the cabin zone. Seiji explicitly discloses this feature (see abstract; see also paragraph [0022]). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to use the direct sensor avoidance of Seiji in order to control the cabin zone temperature in the system of Fisher et al without the increased weight, space, and installation cost of putting a sensor in every zone.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US Patent No. 5,479,983) and Seiji (JP Patent No. 09123731) in view of Taylor et al (US Patent No. 1,921,172).

Regarding claim 3, it is noted that neither Fischer et al nor Seiji explicitly discloses the averaging of the temperatures sensed or targeted in all cabin zones with sensors to be used in the control of the zones without sensors. Taylor et al explicitly disclose the use of average data from multiple sensors for temperature control purposes (see page 1 lines 52-55). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to program the controller of Fischer et al and Seiji to use average data from those sensors which were present when calculating the target injection air temperature for the zones without sensors.

Response to Arguments

7. Applicant's arguments with respect to claims 1-6, 11, and 13-14 have been considered but are moot in view of the new ground(s) of rejection.

To the extent to which the applicant's arguments are still applicable:

Regarding claims 11 and 13, the applicant asserts on page 7 that the claims were allowable over the cited prior art before this amendment but that the language has been changed such that the limitations are required, rather than intended use. Concerning claim 11, this argument is persuasive, although moot in view of the new grounds of rejection; concerning claim 13, it is unpersuasive, but still moot.

It is argued on pages 8-9 that the art applied all requires the use of ambient temperature values for each zone. As the new art specifically excludes this requirement, the argument is unpersuasive.

It is argued on page 10, again, that Fisher requires a sensor for each zone. Again, this is moot in view of the new rejection.

The applicant further argues on page 11 that the combination of Taylor with Fischer is not obvious. Specifically, the features of group control and individual zone control are recited as exclusive and not combinable.

As the combination of these features is what is claimed, exclusivity is clearly not present. Further, the use of Taylor is purely for the purpose of teaching how well known averaging temperatures sensed by various sensors for the purpose of control is; the combination of this averaging data with compensating factors for zone differences would have been obvious to one of ordinary skill in the art at the time of the invention to program the controller to do, because it is an old and well-known technique and because it is relatively simple and easy to do.

It is further argued on page 12 that Taylor only discloses control as informed by ambient temperature readings in the space to be temperature controlled. Again, this is moot in view of Seiji.

For at least these reasons, independent claims 1 and 14 are obvious in view of the cited combination of art, as are dependent claims 2-6.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Simmet et al (US Patent No. 7,540,321) discloses a vehicle air conditioner unit with zones. Kanai et al (US Patent No. 7,539,559) discloses the programming of an air conditioning system. Hanada (Japanese Publication No. 2008190784) discloses temperature control of a department store without and indoor temperature sensor. Nakagawa et al (Japanese Publication No. 2009257617) discloses

a zoned air conditioning system controlled based on estimated temperatures. Bash et al (US Patent No. 6,834,512) discloses a cooling system which does not have all sensor types in all zones. Kume (Japanese Publication No. 2006335116) discloses zoned vehicle temperature control in which there are detection and estimation zones. And Burd (US Patent No. 5,419,489) discloses a mobile thermostat to control space temperature in a building.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXIS K. COX whose telephone number is (571)270-5530. The examiner can normally be reached on Monday through Thursday 8:00a.m. to 5:30p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/582,595
Art Unit: 3744

Page 9

/AKC/

/Frantz F. Jules/

Supervisory Patent Examiner, Art Unit 3744